EXECUTIVE SUMMARY

Gray wolves (*Canis lupus)* were reintroduced into Idaho in 1995 and listed as an experimental nonessential population under Section 10(j) of the Endangered Species Act (ESA). Thirty-five wolves were reintroduced and by 2005, an estimated 600 wolves (61 packs and 36 breeding pairs) were well distributed from the Panhandle to southeast Idaho. In February 2005, the U.S Fish and Wildlife Service (USFWS) modified the 10(j) rule which details State options for management of wolves impacting domestic livestock and wild ungulates (*Endangered and Threatened Wildlife and Plants; Regulation for Nonessential Experimental Populations of the Western Distinct Population Segment of the Gray Wolf* [50 CFR Part 17]).

The provisions of the 10(j) rule fall short of allowing the states' preferred management tool of regulated hunting. However, under Section (v): "If gray wolf predation is having an unacceptable impact on wild ungulate populations (deer, elk, moose, bighorn sheep, mountain goats, antelope, or bison) as determined by the respective State and Tribe (on reservations), the State or Tribe may lethally remove wolves in question. In order for the provision to apply, the States or Tribes must prepare a science-based document that: 1) describes what data indicate that ungulate herd is below management objectives, what data indicate there are impacts by wolf predation on the ungulate population, why wolf removal is a warranted solution to help restore the ungulate herd to State or Tribal management objectives, the level and duration of wolf removal being proposed, and how ungulate population response to wolf removal will be measured; 2) identifies possible remedies or conservation measures in addition to wolf removal; and 3) provides an opportunity for peer review and public comment on their proposal prior to submitting it to the Service for written concurrence."

This document supports the State's determination that gray wolf predation is having an unacceptable impact on wild ungulate populations. Specifically this document reviews the Idaho Department of Fish and Game (IDFG) evaluation of the effect of wolf predation on selected elk populations below state management objectives. The document includes a review of elk population data, the cause-specific mortality research being conducted on elk, the wolf population data, and the modeling conducted to simulate impacts of wolf predation on elk using known population parameters. Additionally, this report identifies remedies and conservation measures that have already been attempted to reduce impacts of the multiple factors influencing the current elk population status, and identifies management actions and objectives to improve and monitor elk populations in the Lolo Zone.

This evaluation addresses the criteria outlined under 10J SEC. (v) and provides detailed information on the following topics:

1. What is the elk management objective?

Management objectives for elk in the Lolo Zone (GMUs 10 and 12) is to maintain an elk population consisting of 6,100 – 9,100 cows and 1,300 – 1,900 bulls. Individual GMU objectives for the Lolo Zone are: 4,200 – 6,200 cows and 900 – 1,300 bulls in GMU 10; and 1,900 – 2,900 cows and 400 – 600 bulls in GMU 12. Population objectives for GMU 17 are 2,400 – 3,600 cows and 650 – 975 bulls.

2. Data used to evaluate populations in relation to management objective.

IDFG biologists use aerial surveys to monitor elk populations throughout the state, including GMUs 10, 12, and 17. Surveys are designed to provide a statistically and biologically sound sampling framework. They are conducted on a 3-5 year rotation and are flown during winter when animals are concentrated on winter range. Biologists generate estimates (and confidence intervals) of population size, age ratios (e.g., calves:100 cows) and sex ratios (e.g., bulls:100 cows) from the survey data. Current status of elk populations are: 1,832 cows and 419 bulls in GMU 10; 1,281 cows and 422 bulls in GMU 12; and 2,076 cows and 486 bulls in GMU 17.

3. Data that demonstrate the impact of wolf predation.

Elk survival rates are estimated using radio-collared animals. A total of 64 adult cow elk were captured, radio-collared, and monitored in GMUs 10 and 12 in 2002-2004 (90 elk-years). Combining samples across areas and years produced point estimates of annual elk survival (includes all mortality sources, unless indicated otherwise) ranging from 75% to 89%, with a 3-year weighted average of 83%. Survival through mid-October 2005 is 80%. We anticipate the annual survival for radio-collared cow elk during 2005 will be lower than any year since monitoring began.

Eight of 25 (35%) mortalities among adult cow elk from January 2002 through mid-October 2005 were attributed to wolves. Wolf-caused mortality was not detected during 2002 or 2003; whereas 2 deaths were attributed to wolf predation in 2004 and 6 through 20 October 2005. Three additional losses resulted from predation, but species of predator could not be determined. Six cow elk died of unknown causes.

Similar survival and cause-specific mortality data for elk in GMU 17 does not exist because of logistical difficulties with capture and monitoring of elk in designated Wilderness.

IDFG used available data and assumptions based on peer-reviewed literature to simulate the impacts of wolf predation on elk populations in north-central Idaho. All simulations revealed a lack of cow elk population growth in the presence of wolf predation. Most simulations suggest moderate to steep declines in abundance caused by wolf predation. Regardless of the approach we used to model elk populations, all simulations used suggest wolves are limiting population growth.

4. Why wolf removal is warranted.

Based on the evaluation and analysis of available data, the State determines that wolf predation is having an unacceptable impact on elk populations in GMUs 10 and 12. These populations are declining as a result of inadequate cow survival and recruitment and do not meet state management objectives. Despite extensive conservation measures taken in an effort to restore these populations to management objectives, the population continues to decline. This evaluation demonstrates that wolves play an important role in limiting recovery of this elk population and that wolf removal is warranted as allowed under the 10(j) rule.

There are multiple reasons for the elk population decline in the Lolo Zone; this proposal addresses 3 primary elements:

1. Habitat – implement the Clearwater Elk Initiative recommendations. Timely implementation will speed recovery.
2. Calf survival – reduce predation by black bears and mountain lions.
3. Cow survival – reduce all mortality factors, including human harvest and predation by mountain lions and wolves.

Data from the Lolo Zone and elsewhere indicate that wolf predation is, at a minimum, partly additive and likely contributes to low adult female elk survival. Without an increase in cow elk survival, the Lolo Zone elk population is unlikely to achieve management objectives. Wolf populations should be managed to reduce predation on adult cow elk.

Management of most big game populations is accomplished through regulated harvest by hunters. A reduction in wolf numbers in the Lolo Zone should be accomplished through regulated take by sportsmen. However, existing federal rules prohibit legal hunter take of species classified as experimental nonessential under the ESA. Wolf numbers in Idaho far exceed recovery goals and limited removal of wolves from the Lolo Zone will not adversely affect recovery.

5. Level and duration of wolf removal.

We propose to reduce the wolf population in the Lolo Zone by up to 75% (no more than 43 wolves) of the current mid-point wolf population estimate (58) during year one, and maintain the population at 25-40% of pre-removal wolf abundance for 5 years. Concurrently, we will monitor elk and wolf populations. After 5 years, results will be analyzed and a peer-reviewed manuscript will be published evaluating the effect of wolf removal on elk population dynamics.

6. How will ungulate response be measured?

We will monitor the performance of elk populations in GMUs 10 and 12 with ongoing statewide research efforts on elk and mule deer and within the context of Clearwater Region wildlife management activities. The information will include fecundity, age/sex-specific survival rates, and cause/age/sex-specific mortality rates. We will use aerial surveys to monitor elk populations in GMUs 10, 12, and 17. Complete surveys will be conducted every 3-5 years and composition surveys will be flown during intervening years.

In GMUs 10 and 12, we will document elk survival rates and cause-specific mortality factors from samples of radio-marked adult cow and calf elk.